



QC ABSTRACT						
NAME OF WORK: Improvements to Roads and Drains at Munibyrapa Layout Chamundeshwari Temple and surrounding Area in Ward No 09 (Vidyaranyaपुरa).						
SL NO	Item Of Work	Name of Test	Frequency of Test/Quantity	Executed Quantity	Number of Tests Required	Number of Tests Conducted
Materials						
1	Cement	Fineness by dry sieving	One Test		1	1
		Fineness by Air permeability method	One Test		1	1
		Density	One Test		1	1
		Standard Consistency	One Test		1	1
		Initial Setting time	One Test		1	1
		Final Setting time	One Test		1	1
		Soundness (Le Chatelier's Method)	One Test		1	1
		Compressive Strength	One Test		1	1
2	Coarse aggregate(40 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
		SIEVE ANALYSIS	One Test		1	1
3	Coarse aggregate(20 mm down size)	Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
		Aggregate crushing Value	One Test		1	1
		Aggregate Impact Value	One Test		1	1
4	Fine aggregate	SIEVE ANALYSIS	One Test		1	1
		Water Absorption	One Test		1	1
		Specific Gravity	One Test		1	1
		Material finer than 75 micron	One Test		1	1
5	Block(400*150*200)	BLOCK DENSITY	One Test		1	1
		WATER ABSORPTION	One Test		1	1
		DIMENSION ANALYSIS	One Test		1	1
		COMPRESSIVE STRENGTH	One Test		1	1
6	Precast (150mm)	Core Compressive Strength	One Test		1	1
		Corrected Cylinder Compressive Strength	One Test		1	1
		Equivalent Cube Compressive Strength	One Test		1	1
7	PCC(M15)	Compressive Strength(7days and 28days)	4 set /31-50 cum	41.2	8	8
8	WMM	Sieve Analysis	One Test		1	1
		Impact Value	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1



9	BM	SIEVE ANALYSIS	One Test		1	1
		STRIPPING VALUE	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		IMPACT VALUE	One Test		1	1
		Specific gravity	One Test		1	1
		Water Absorption	One Test		1	1
		Marshal Stability	One Test		1	1
		Marshal flow	One Test		1	1
		Percent air Voids	One Test		1	1
		Percent Voids in mineral Aggregate	One Test		1	1
		Percent Voids filled with Bitumen	One Test		1	1
		Density	One Test		1	1
		Gradation	One Test		1	1
10	BC	SIEVE ANALYSIS	One Test		1	1
		STRIPPING VALUE	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		IMPACT VALUE	One Test		1	1
		Specific gravity	One Test		1	1
		Water Absorption	One Test		1	1
		Marshal Stability	One Test		1	1
		Marshal flow	One Test		1	1
		Percent air Voids	One Test		1	1
		Percent Voids in mineral	One Test		1	1
		Percent Voids filled with Bitumen	One Test		1	1
		Density	One Test		1	1
		Gradation	One Test		1	1
11	BITUMEN	Ductility	One Test		1	1
		Softening Point	One Test		1	1
		Penetration	One Test		1	1
		Flash Point	One Test		1	1
		Fire Point	One Test		1	1
12	TACK COAT	Rate of spread	One Test		1	1

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Certificate No.: TC-5548

Format No. CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : CP-2021-06-30-58 Date: 12-08-21
Customer : Assistant Executive Engineer, Vidyanarayapura Sub Division, BBMP,
Address : Vidyanarayapura Sub Division, BBMP, Bangalore
Project Name : Improvements to Roads and Drains at Munibyrappa Layout
Chamundeshwari Temple and surrounding Area in Ward No 09
(Vidyanarayapura)
Agency : Sri R.S.Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-
560013
Customer's Reference : BBMP/EE/BTP/WO/164/2020-21
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 09-08-21
Sample Type : Birla Super 53grade
Reference to BIS codes : IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,
IS 4031 (Part 1,2 3,4,5, 6,11) 1988
IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4 4
IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5
IS 4031 Part 3, Determination of Soundness, Clause 5, Clause 6
IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5
IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5
IS 4031 Part 11, DETERMINATION OF DENSITY , Clause 6

Date of test : 10-08-21

Environmental Conditions during test : Temperature: 26°C
Humidity: 72%

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	2.1	—
2	Finess by Air permeability method (m ² /kg,Min)	284.5	225m ² /kg, Min
3	Density (gm/cc)	3.13	—
4	Standard Consistency (%)	28%	Not specified
5	Initial Setting time	155 minutes	Not less than 30 minutes
6	Final Setting time	260 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	2mm	Not more than 10 mm

* The results obtained are satisfactory as per standard requirements.

Note:

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

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Samples will be disposed after 30 days from the date of issue of test certificate

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KARTHIK RECHAN
Authorized Signatory
Quality Manager

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Certificate No.: TC-5548

Format No. CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : CP-2021-06-30-58 Date: 07-09-21
Customer : Assistant Executive Engineer, Vidyanarayana Sub Division, BBMP, Bangalore.
Address : Vidyanarayana Sub Division, BBMP, Bangalore
Project Name : Improvements to Roads and Drains at Munibyrappa Layout Chamundeshwari Temple and surrounding Area in Ward No 09 (Vidyanarayana)
Agency : Sri R S Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-560013
Customer's Reference : BBMP/EE/BTP/WO/164/2020-21
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 09-08-21
Sample Type : Birla Super 53grade
Reference to BIS codes : IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,
IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5
IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test : 10-08-21
Environmental Conditions during test : Temperature: 26°C
Humidity: 72%

Compressive Strength			
Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	28.5N/mm ²	Not less than 27 N/mm ²
2	7 Days	39.0N/mm ²	Not less than 37 N/mm ²
3	28 Days	58.5N/mm ²	Not less than 53 N/mm ²

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TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2021-06-30-58 **Date:** 12-08-21

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Munibyrappa Layout Chamundeshwari Temple and surrounding Area in Ward No 09 (Vidyaranyapura).

Agency : Sri.R.S.Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-560013

Customer's Reference : BBMP/EE/BTP/WO/164/2020-21

Source of Sample : Sample supplied by Agency

Sample condition : Satisfactory

Date of Receipt : 09-08-21

Sample Type : 40mm down size coarse aggregate

Reference to BIS codes : IS: 383:2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1,3,4) RA2011
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption
IS 2386 Part 4: Mechanical Properties

Date of test : 09-08-21

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	214	214	1.4	98.6	90-100
3	20 mm	7254	7468	49.8	50.2	30-70
4	10 mm	4442	11910	79.4	20.6	10-35
5	4.75 mm	2685	14595	97.3	2.7	0-5
6	Pan	405	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID

:

CP-2021-06-30-58

Date: 12-08-21

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	10.6	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	12.3	
3	Specific Gravity	2.64	—
4	Bulk Density(Loose) (Kg/l)	1.49	—
5	Bulk Density(Compacted) (Kg/l)	1.52	—
6	Water Absorption(%)	0.17	—

* The results obtained are satisfactory as per standard requirements.

Note:

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TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2021-06-30-58 **Date:** 11-08-21
Customer : Assistant Executive Engineer, Vidyanarayapura Sub Division, BBMP, Bangalore.
Address : Vidyanarayapura Sub Division, BBMP, Bangalore.
Project Name : Improvements to Roads and Drains at Munibyrappa Layout Chamundeshwari Temple and surrounding Area in Ward No 09 (Vidyanarayapura).
Agency : Sri.R.S.Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/164/2020-21
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 09-08-21
Sample Type/ Size : 20mm down size coarse aggregate
Reference to BIS codes : IS: 383:2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1,3,4) RA2011
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption
IS 2386 Part 4: Mechanical Properties
Date of test : 09-08-21

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	237	237	4.7	95.3	90-100
3	10 mm	2544	2781	55.6	44.4	25-55
4	4.75 mm	2107	4888	97.8	2.2	0-10
5	Pan	112	5000	100	0	—

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TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2021-06-30-58

Date: 11-08-21

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	10.7	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	11.4	
3	Specific Gravity	2.65	—
4	Bulk Density(Loose) (Kg/l)	1.53	—
5	Bulk Density(Compacted) (Kg/l)	1.57	—
6	Water Absorption(%)	0.19	—
7	Aggregate crushing Value(%)	25.6	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	22.5	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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Quality Manager

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TEST REPORT OF FINE AGGREGATE

Lab ID : CP-2021-06-30-58 Date: 11-08-21

Customer : Assistant Executive Engineer, Vidyanarayapura Sub Division, BBMP, Bangalore.

Address : Vidyanarayapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Munibyrappa Layout Chamundeshwari Temple and surrounding Area in Ward No 09 (Vidyanarayapura).

Agency : Sri.R.S.Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-560013

Customer's Reference : BBMP/EE/BTP/WO/164/2020-21

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 09-08-21

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption

Date of test : 09-08-21

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	27	27	2.7	97.3	90-100	90-100	90-100	95-100
3	2.36 mm	55	82	8.2	91.8	60-95	75-100	85-100	95-100
4	1.18 mm	239	321	32.1	67.9	30-70	55-90	75-100	90-100
5	600 micron	205	526	52.6	47.4	15-34	35-59	60-79	80-100
6	300 micron	203	729	72.9	27.1	5-20	8-30	12-40	15-50
7	150 micron	191	920	92.0	8.0	0-10	0-10	0-10	0-15
8	Pan	80	1000	100.0	0.0	---	---	---	---

Result : The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : CP-2021-06-30-58

Date: 11-08-21

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.5	—
2	Specific Gravity	2.59	—
3	Material finer than 75 micron(%)	6.9	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

* The results obtained are satisfactory as per standard requirements.

Note:

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Quality Manager

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TEST REPORT ON PHYSICAL REQUIREMENTS OF SOLID CONCRETE BLOCKS

Lab ID : CP-2021-06-30-58 Date: 27-08-21

Customer : Assistant Executive Engineer, Vidyanarayapura Sub Division, HBMP, Bangalore

Address : Vidyanarayapura Sub Division, HBMP, Bangalore

Project Name : Improvements to Roads and Drains at Munihyrapura Layout Chamundeshwari Temple and surrounding Area in Ward No 09 (Vidyanarayapura)

Agency : Sri R S Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-560013

Customer's Reference : HBMP/EE/BTP/WO/164/2020-21

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 23-08-21

Sample Type/Size : Solid concrete blocks size (400X150X200)mm

Reference to BIS codes : IS : 2185 (Part 1) : 2005(RA 2010) Concrete Masonry Specification
Part I Hollow and Solid Concrete Blocks (Dimensions -Annex-B, Clause 9.2 and 10 , Block density Annex - C Clause 9.3 and 10, Compressive strength Annex -D Clause 9.4 and 10, Water absorption Annex -E Clause 9.5 and 10)

Date of test : 23-08-21

BLOCK DENSITY:

Sl. No.	Measurement of overall Dimensions of Individual Blocks			Overall Volume of the Block in Cubic Centimetres	Weight of Oven Dried Block in Kilograms to the nearest 10 Gram	Block Density in Kg/cum*10 ⁴	Avg. Block Density in (Kg/cum)	As per IS 2185(Part 1) :2005 (RA 2010)
	Length	Breadth	Height					
	mm	mm	mm	(Cm ³)	Kg	Kg/m ³	Kg/m ³	
1	404	150	199	12059	23.387	1939.3	1865.1	Not less than 1800Kg/m ³
2	405	152	201	12374	22.184	1792.8		
3	403	153	202	12455	23.207	1863.3		

WATER ABSORPTION:

Sl. No.	Wet weight after water absorption	Dry weight (Oven dry)	Water Absorption	Avg. Water Absorption	As per IS 2185(Part 1):2005 (RA 2010)
	kg	kg	%	%	
1	33.91	32.25	4.89	4.25	Shall not be more than 10% by mass
2	33.57	32.14	4.28		
3	33.44	32.24	3.59		

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Lab ID : CP-2021-06-30-58

Date: 27-08-21

DIMENSION ANALYSIS

Sl.no	Length mm	Breadth mm	Height mm	Requirement as per IS 2185(Part 1):2005
1	402	150	203	Length : $\pm 5\text{mm}$ Breadth : $\pm 3\text{mm}$ Height : $\pm 3\text{mm}$
2	400	150	201	
3	401	149	199	
4	400	153	200	
5	403	152	199	
6	401	152	203	
7	400	151	203	
8	404	151	200	
9	400	149	203	
10	400	149	201	
11	401	151	201	
12	401	151	203	
13	399	151	199	
14	401	151	200	
15	402	151	202	
16	402	151	203	
17	403	150	200	
18	404	152	199	
19	400	152	201	
20	403	152	201	
Average of 20	401	151	201	

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27/08/21

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Lab ID : C P-2021-06-30-58

Date: 27-08-21

COMPRESSIVE STRENGTH:

SL No.	Size of solid block		Area	Failure Load	Compressive strength	Average Compressive strength
	Length	Breadth				
	mm	mm	(mm ²)	(kN)	N/mm ²	(N/mm ²)
1	402	150	60386	276.5	4.6	4.5
2	400	150	60097	264.7	4.4	
3	401	149	59697	271.0	4.5	
4	400	153	61062	274.9	4.5	
5	403	152	61361	270.4	4.4	
6	401	152	61005	278.8	4.6	
7	400	151	60129	272.0	4.5	
8	404	151	60816	275.6	4.5	

As per IS Requirements (Table 2, Clause 5.1, 5.2 and 9.4)

Compressive strength		
Grade	Minimum average	Minimum Individual units.
C (5.0)	5.00 N/mm ²	4.00 N/mm ²
C (4.0)	4.00 N/mm ²	3.20 N/mm ²

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Quality Manager



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TEST REPORT OF PRECAST COVER SLAB

Lab ID : CP-2021-06-30-58 Date: 28-08-21
Customer : Assistant Executive Engineer, Vidyanayapura Sub Division, BBMP, Bangalore
Address : Vidyanayapura Sub Division, BBMP, Bangalore.
Project Name : Improvements to Roads and Drains at Munibyrappa Layout Chamundeshwari Temple and surrounding Area in Ward No 09 (Vidyanayapura)
Agency : Sri.R.S.Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-560013
Customer's Reference : BBMP/EE/BTP/WO/164/2020-21
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 24-08-21
Sample Type /Size : Precast Cover Slab (250mm)
Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete
Date of test : 24/08/2021

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	(kg)	(Sq.mm)	(KN)	(N/mm ²)	(N/mm ²)	(N/mm ²)
1	Cover Slab-1	200.51	250.48	3.116	31570	680.9	21.6	20.1	25.1
2	Cover Slab-2	200.49	250.52	3.122	31564	692.3	21.9	20.4	25.5
3	Cover Slab-3	200.50	250.51	3.118	31567	686.5	21.7	20.2	25.3

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2021-06-30-58 Date: 28/08/2021

Customer : Assistant Executive Engineer, Vidyanarayana Sub Division, BBMP, Bangalore

Address : Vidyanarayana Sub Division, BBMP, Bangalore

Project Name : Improvements to Roads and Drains at Munibyrappa Layout Chamundeshwari Temple and surrounding Area in Ward No 09 (Vidyanarayana)

Agency : Sri R S Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-560013

Customer's Reference : BBMP/EE/BTP/WO/164/2020-21

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 23-08-21

Customer ID : Bed Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 28/08/2021

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm ²)	(N/mm ²)
1	Bed Concrete	M15	21/08/2021	28/08/2021	149.92 X 151.52 X 151.23	22716	8.339	293.1	12.9	12.5
2	Bed Concrete	M15	21/08/2021	28/08/2021	149.14 X 149.88 X 150.08	22353	8.362	282.4	12.6	
3	Bed Concrete	M15	21/08/2021	28/08/2021	150.20 X 150.71 X 150.74	22638	8.184	274.2	12.1	

* The results obtained are satisfactory as per standard requirements

Note:

The results pertain to the samples received and tested

All information furnished by Customer/Representative

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R. KARTHIK RECHAN
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Quality Manager

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Certificate No.: TC-5548

Format No. CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2021-06-30-58 Date: 18/09/2021

Customer : Assistant Executive Engineer, Vidyanayapura Sub Division, BBMP, Bangalore

Address : Vidyanayapura Sub Division, BBMP, Bangalore

Project Name : Improvements to Roads and Drains at Munibyrappa Layout Chamundeshwari Temple and surrounding Area in Ward No 09 (Vidyanayapura)

Agency : Sri R S Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-560013

Customer's Reference : BBMP/EE/BTP/WO/164/2020-21

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 23-08-21

Customer ID : Bed Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS 516 - 1959 Methods of Tests for Strength of Concrete C15

Date of test : 18/09/2021

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm ²)	(N/mm ²)
1	Bed Concrete	M15	21/08/2021	18/09/2021	151.88 X	22647	8.561	405.8	17.9	17.6
					149.12 X					
					151.47					
2	Bed Concrete	M15	21/08/2021	18/09/2021	151.33 X	22584	8.513	387.4	17.2	
					149.23 X					
					149.66					
3	Bed Concrete	M15	21/08/2021	18/09/2021	150.45 X	22661	8.683	403.8	17.8	
					150.62 X					
					149.36					

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Certificate No.: TC-5548

Format No. CP/TF 01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2021-06-30-58 Date: 28/08/2021
 Customer : Assistant Executive Engineer, Vidyanayapura Sub Division, BBMP, Bangalore
 Address : Vidyanayapura Sub Division, BBMP, Bangalore
 Project Name : Improvements to Roads and Drains at Munibyrappa Layout Chamundeshwari Temple and surrounding Area in Ward No 09 (Vidyanayapura)
 Agency : Sri R S Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-560013
 Customer's Reference : BBMP/EE/BTP/WO/164/2020-21
 Source of Sample : Sample supplied by Agency
 Sample Condition : Satisfactory
 Date of Receipt : 23-08-21
 Customer ID : Bed Concrete
 Sample Type /Size : 150X150X150 mm
 Sample grade/Age : M15 / 7 Days Compressive Strength
 Reference to BIS codes : IS 516 - 1959 Methods of Tests for Strength of Concrete C15

Date of test : 28/08/2021

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm ²)	(N/mm ²)
1	Bed Concrete	M15	21/08/2021	28/08/2021	150.06 X	22640	8.339	273.7	12.1	12.2
					150.88 X					
					151.85					
2	Bed Concrete	M15	21/08/2021	28/08/2021	149.89 X	22371	8.362	272.4	12.2	
					149.24 X					
					149.75					
3	Bed Concrete	M15	21/08/2021	28/08/2021	149.58 X	22670	8.184	277.8	12.3	
					151.56 X					
					151.05					

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Certificate No.: TC-5548

Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2021-06-30-58 **Date:** 18/09/2021

Customer : Assistant Executive Engineer, Vidyanayapura Sub Division, BBMP, Bangalore

Address : Vidyanayapura Sub Division, BBMP, Bangalore

Project Name : Improvements to Roads and Drains at Munbyrappa Layout Chamundeshwari Temple and surrounding Area in Ward No 09 (Vidyanayapura)

Agency : Sri R S Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-560013

Customer's Reference : BBMP/EE/BTP/WO/164/2020-21

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 23-08-21

Customer ID : Bed Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS 516 - 1959 Methods of Tests for Strength of Concrete C15

Date of test : 18/09/2021

SL No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm ²)	(N/mm ²)
1	Bed Concrete	M15	21/08/2021	18/09/2021	150.61 X	22710	8.561	387.7	17.1	17.2
					150.79 X					
					151.83					
2	Bed Concrete	M15	21/08/2021	18/09/2021	149.08 X	22405	8.513	383.7	17.1	
					150.29 X					
					151.67					
3	Bed Concrete	M15	21/08/2021	18/09/2021	150.26 X	22599	8.683	390.7	17.3	
					150.41 X					
					150.65					

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2021-06-30-58 Date: 02/09/2021
Customer : Assistant Executive Engineer, Vidyanarayana Sub Division, BBMP, Bangalore
Address : Vidyanarayana Sub Division, BBMP, Bangalore
Project Name : Improvements to Roads and Drains at Mumbyrappa Layout Chamundeshwari Temple and surrounding Area in Ward No 09 (Vidyanarayana)
Agency : Sri R S Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-560013
Customer's Reference : BBMP/EE/BTP/VO/164/2020-21
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 28-08-21
Customer ID : Copping Concrete
Sample Type /Size : 150X150X150 mm
Sample grade/Age : M15 / 7 Days Compressive Strength
Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl 5

Date of test : 02/09/2021

SL No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)					
1	Coping Concrete	M15	26-08-2021	02/09/2021	149.54 X	22650	8.339	293.2	12.9	12.7
					151.46 X					
					151.92					
2	Coping Concrete	M15	26-08-2021	02/09/2021	150.55 X	22799	8.362	294.4	12.9	
					151.43 X					
					151.58					
3	Coping Concrete	M15	26-08-2021	02/09/2021	150.96 X	22729	8.184	277.1	12.2	
					150.56 X					
					151.55					

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Quality Manager



Format No. CP/TF-01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2021-06-30-58 Date: 23/09/2021
Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore
Address : Vidyaranyapura Sub Division, BBMP, Bangalore
Project Name : Improvements to Roads and Drains at Munibyrappa Layout Chamundeshwari Temple and surrounding Area in Ward No 09 (Vidyaranyapura)
Agency : Sri R S Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-560013
Customer's Reference : BBMP/EE/BTP/WO/164/2020-21
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 28-08-21
Customer ID : Coping Concrete
Sample Type /Size : 150X150X150 mm
Sample grade/Age : M15 / 28 Days Compressive Strength
Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl 5
Date of test : 23/09/2021

SL No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm ²)	(N/mm ²)
1	Coping Concrete	M15	26.08/2021	23.09/2021	151.96 X	22644	8.561	391.6	17.3	17.5
					149.01 X					
					150.24					
2	Coping Concrete	M15	26.08/2021	23.09/2021	152.00 X	22949	8.513	406.9	17.7	
					150.98 X					
					151.91					
3	Coping Concrete	M15	26.08/2021	23.09/2021	149.69 X	22395	8.683	390.1	17.4	
					149.61 X					
					149.90					

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Note:

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Authorized Signatory
Quality Manager



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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2021-06-30-58 Date: 02/09/2021
Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore
Address : Vidyaranyapura Sub Division, BBMP, Bangalore
Project Name : Improvements to Roads and Drains at Munibyaappa Layout Chamundeshwari Temple and surrounding Area in Ward No 09 (Vidyaranyapura)
Agency : Sri R. S. Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-560013
Customer's Reference : BBMP/E-I/BIP/WO/164/2020-21
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 28/08/21
Customer ID : Coping Concrete
Sample Type/Size : 150X150X150 mm
Sample grade/Age : M15 / 7 Days Compressive Strength
Reference to BIS codes : IS - 516 - 1959 Methods of Tests for Strength of Concrete CI 5
Date of test : 02/09/2021

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm ²)	(N/mm ²)
1	Coping Concrete	M15	26/08/2021	02/09/2021	151.29 %	22768	8.339	283.6	12.5	12.3
					150.49 %					
					149.75					
2	Coping Concrete	M15	26/08/2021	02/09/2021	150.65 %	22684	8.362	282.8	12.5	
					150.58 %					
					149.47					
3	Coping Concrete	M15	26/08/2021	02/09/2021	149.39 %	22512	8.184	271.0	12.0	
					150.69 %					
					149.17					

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Certificate No.: TC-5548

Format No. CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2021-06-30-58 Date: 23/09/2021

Customer : Assistant Executive Engineer, Vidyanayapura Sub Division, BBMP, Bangalore

Address : Vidyanayapura Sub Division, BBMP, Bangalore

Project Name : Improvements to Roads and Drains at Munibyrappa Layout Chamundeshwari Temple and surrounding Area in Ward No 09 (Vidyanayapura)

Agency : Sri R S Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-560013

Customer's Reference : BBMP/EE/BTP/WO/164/2020-21

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 28-08-21

Customer ID : Coping Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS 516 - 1959 Methods of Tests for Strength of Concrete CI 5

Date of test : 23/09/2021

SL No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm ²)	(N/mm ²)
1	Coping Concrete	M15	26/08/2021	23/09/2021	150.66 X 151.00 X 149.16	22750	8.561	402.6	17.7	17.7
2	Coping Concrete	M15	26/08/2021	23/09/2021	151.84 X 149.51 X 150.71	22702	8.513	404.0	17.8	
3	Coping Concrete	M15	26/08/2021	23/09/2021	151.75 X 150.44 X 150.87	22829	8.683	402.6	17.6	

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Note:

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TEST RESULTS OF GRADATION FOR WMM

Lab ID : CP-RW-2021-06-30-58 **Date:** 29-12-21
Customer : Assistant Executive Engineer, Vidyanayapura Sub Division, BBMP, Bangalore.
Address : Vidyanayapura Sub Division, BBMP, Bangalore.
Project Name : Improvements to Roads and Drains at Munibyrappa Layout Chamundeshwari Temple and surrounding Area in Ward No 09 (Vidyanayapura).
Agency : Sri.R.S.Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/164/2020-21
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 27-12-21
Type of Mix : WMM (Wet Mix Macadam)
Date of Test : 27-12-21
Oven Dry Weight : 11000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	315	315	2.9	97.1	95-100
22.4	2259	2574	23.4	76.6	60-80
11.2	2179	4753	43.2	56.8	40-60
4.75	2251	7004	63.7	36.3	25-40
2.36	1621	8625	78.4	21.6	15-30
0.6	623	9248	84.1	15.9	8-22
0.075	1338	10586	96.2	3.8	0-5

* The results obtained are satisfactory as per standard requirements.

Note:-

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Quality Manager



TEST RESULTS OF GRADATION FOR WMM

Lab ID : CP-RW-2021-06-30-58 Date: 30-12-21
Customer : Assistant Executive Engineer, Vidyananyapura Sub Division, BBMP, Bangalore
Address : Vidyananyapura Sub Division, BBMP, Bangalore
Project Name : Improvements to Roads and Drains at Munibyrappa Layout Chamundeshwari Temple and surrounding Area in Ward No 09 (Vidyananyapura).
Agency : Sri R S Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/164/2020-21
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 28-12-21
Type of Mix : WMM (Wet Mix Macadam)
Date of Test : 28-12-21
Oven Dry Weight : 11000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec. Ivide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	315	315	2.9	97.1	95-100
22.4	2259	2574	23.4	76.6	60-80
11.2	2179	4753	43.2	56.8	40-60
4.75	2251	7004	63.7	36.3	25-40
2.36	1621	8625	78.4	21.6	15-30
0.6	623	9248	84.1	15.9	8-22
0.075	1338	10586	96.2	3.8	0-5

* The results obtained are satisfactory as per standard requirements

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Quality Manager



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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

TEST REPORT OF AGGREGATE IMPACT VALUE

IS: 2386 Part IV

Lab ID : CP-RW-2021-06-30-58 Date: 29-12-21

Customer : Assistant Executive Engineer, Vidyanayapura Sub Division, BBMP, Bangalore

Address : Vidyanayapura Sub Division, BBMP, Bangalore

Project Name : Improvements to Roads and Drains at Munibyrappa Layout Chamundeshwari Temple and surrounding Area in Ward No 09 (Vidyanayapura)

Agency : Sri R.S.Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-560013

Customer Reference : BBMP/EE/BTP/WO/164/2020-21

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 27-12-21

Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)

Date of Test : 27-12-21

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample (passing 12.5 mm and retained on 10mm sieve)	A	300.2	300.2
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	73.9	74.0
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	225.9	225.8
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.4	0.4
5	Aggregate impact value	(B/A)*100	24.6	24.7
6	Aggregate impact value (Mean of two tests)	Percentage	24.6	

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**DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE (IS 2386 (Part 1) 1963 (RA 2007))**

Lab ID : CP-RW-2021-06-30-58 **Date:** 29-12-21
Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address : Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name : Improvements to Roads and Drains at Munibyrappa Layout Chamundeshwari Temple and surrounding Area in Ward No 09
Agency : Sri.R.S.Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/164/2020-21
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 27-12-21
Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
Date of Test : 27-12-21

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	12.8%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.5%	
Combined Flakiness and Elongation Index for WMM	25.3%	

* The results obtained are satisfactory as per standard requirements.

Note:-

The results pertain to the samples received and tested

All information Furnished by Customer/ Representative

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Certificate No : TC 5548

Format No : CP/H/01

TEST REPORT ON BITUMEN

Lab ID : CP-RW-2021-06-30-58 Date: 01-01-22
Customer : Assistant Executive Engineer, Vidyananyapura Sub Division, HHMP,
Bangalore
Address : Vidyananyapura Sub Division, HHMP, Bangalore
Project Name : Improvements to Roads and Drains at Munbyrappa Layout
Chamundeswari Temple and surrounding Area in Ward No 09
(Vidyananyapura)
Agency : Sri R S Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-560013
Customer's Reference : HHMP/FE/HIP/WO/164/2020-21
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 30-12-21
Sample Type : Bitumen
Reference to BIS codes : IS: 1201-1220(1978) (Reaffirmed-2004)
Date of Test : 30-12-21

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C, in 1/10th mm	64	60 to 70
2	Softening Point, °C	51.2	Min. 40°C
3	Ductility, cm	98	Min. 75cm
4	Flash point, °C	245	Min. 220°C
	Fire point, °C	272	

* The results obtained are satisfactory as per standard requirements

Note:-

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TEST RESULTS OF GRADATION FOR BM (IS 2386:(Part 1) 1963 (RA2011))

Lab ID : CP-RW-2021-06-30-58 Date: 03-01-22
Customer : Assistant Executive Engineer, Vidyananyapura Sub Division, BBMP, Bangalore.
Address : Vidyananyapura Sub Division, BBMP, Bangalore.
Project Name : Improvements to Roads and Drains at Munibyrappa Layout Chamundeshwari Temple and surrounding Area in Ward No 09 (Vidyananyapura).
Agency : Sri.R.S.Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/164/2020-21
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 01-01-22
Type of Mix : BM-Plant (Bituminous Macadam)
Date of Test : 01-01-22
Weight of Sample(gm) : 5000

IS Sieve Size(mm)	Weight Retained(gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0	100	100
19	165	165	3.3	96.7	90-100
13.2	512	677	13.5	86.5	56-88
4.75	2759	3436	68.7	31.3	16-36
2.36	911	4347	86.9	13.1	4-19
0.3	358	4705	94.1	5.9	2-10
0.075	232	4937	98.7	1.3	0-8
PAN	63	5000	100.0	0.0	0

* The results obtained are satisfactory as per standard requirements.

Note:-

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Authorized Signatory
Quality Manager



PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS MACADAM

Lab ID : CP-RW-2021-06-30-58 Date: 04-01-22

Customer : Assistant Executive Engineer, Vidyanarayana Sub Division, BBMP, Bangalore.

Address : Vidyanarayana Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drains at Munibyrappa Layout Chamundeshwari Temple and surrounding Area in Ward No 09 (Vidyanarayana).

Agency : Sri.R.S.Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-560013

Customer Reference : BBMP/EE/BTP/WO/164/2020-21

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 01-01-22

Type of Mix : BM (Bituminous Macadam)

Date of Test : 01-01-22

Table 500-6 : Physical Requirements for Coarse Aggregate for Bituminous Macadam

Property	Test	Result	Specification	Method of Test
Partial Shape	Flakiness Index	13.8	Combined Flakiness & Elongation Index for BM is Maximum 35%	IS:2386 Part I
	Elongation Index	7.2		
Strength	Aggregate Impact Value	25.2	Maximum 30%	IS:2386 Part IV
Specific gravity	Specific gravity	2.51	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.17	Maximum 2%	IS:2386 Part III

* The results obtained are satisfactory as per standard requirements.

Note:-

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TEST REPORT OF AGGREGATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID : CP-RW-2021-06-30-58 Date: 04-01-22
Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address : Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name : Improvements to Roads and Drains at Munibyrappa Layout Chamundeshwari Temple and surrounding Area in Ward No 09 (Vidyaranyapura).
Agency : Sri.R.S.Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/164/2020-21
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 01-01-22
Type of Mix : BM(Bitumnous Macadam)
Date of Test : 01-01-22
Type of Binder : 60/70
% of Binder Used : 5.0%
Weight of Aggregate : 200.0 gm
Weight of Binder : 10.0 gm
Temperature of water bath : 40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.0	2.0	98.2	Minimum Retained Coating 95%
2	98.5	1.5		
3	98.0	2.0		

* The results obtained are satisfactory as per standard requirements.

Note:-

The results pertain to the samples received and tested.

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TESTS RESULTS ON STABILITY OF MIX

Lab ID : CP-RW-2021-06-30-58 **Date:** 04-01-22
Customer : Assistant Executive Engineer, Vidyanarayapura Sub Division, BBMP, Bangalore.
Address : Vidyanarayapura Sub Division, BBMP, Bangalore.
Project Name : Improvements to Roads and Drains at Munibyrappa Layout Chamundeshwari Temple and surrounding Area in Ward No 09 (Vidyanarayapura).
Agency : Sri.R.S.Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/164/2020-21
Source of Sample : Hot Mix Plant, Bangalore
Sample Condition : Satisfactory
Date of Receipt : 01-01-22
Type of Mix : BM (Bituminous Macadam)
Date of Test : 01-01-22

The results of the tests conducted on the Bituminous Macadam mix sample are as follow				
Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.29	11.82	9KN(Min)
2	Marshal flow at 60°C, mm	3.54	3.87	2-4
3	Percent air Voids	4.56	4.17	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.54	14.76	13-15
5	Percent Voids filled with Bitumen(VFB %)	68.98	70.28	65-75
6	Density, g/cc	2.42	2.40	—

* The results obtained are satisfactory as per standard requirements.

Note:-

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Quality Manager



TEST RESULTS OF GRADATION FOR BC IS 2386 (Part 1) 1963 (RA 2007)

Lab ID : CP-RW-2021-06-30-58 Date: 07-01-22
Customer : Assistant Executive Engineer, Vidyanarayapura Sub Division, BBMP, Bangalore.
Address : Vidyanarayapura Sub Division, BBMP, Bangalore.
Project Name : Improvements to Roads and Drains at Munibyrappa Layout Chamundeshwari Temple and surrounding Area in Ward No 09 (Vidyanarayapura).
Agency : Sri R.S.Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/164/2020-21
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 04-01-22
Type of Mix : BC-Plant (Bituminous Concrete)
Date of Test : 04-01-22
Oven Dry Weight : 5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified limits as per MORTH specification table 500-17(grading-2)
19	0	0	0.0	100.0	100
13.2	89	89	1.8	98.2	90-100
9.5	702	791	15.8	84.2	70-88
4.75	895	1686	33.7	66.3	53-71
2.36	587	2273	45.5	54.5	42-58
1.18	492	2765	55.3	44.7	34-48
0.6	503	3268	65.4	34.6	26-38
0.3	528	3796	75.9	24.1	18-28
0.15	458	4254	85.1	14.9	12-20
0.075	350	4604	92.1	7.9	4-10
PAN	396	5000	100	0.0	0

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT OF AGGREGATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID : CP-RW-2021-06-30-58 Date: 07-01-22
Customer : Assistant Executive Engineer, Vidyanarayapura Sub Division, BBMP, Bangalore.
Address : Vidyanarayapura Sub Division, BBMP, Bangalore.
Project Name : Improvements to Roads and Drains at Munibyrappa Layout Chamundeshwari Temple and surrounding Area in Ward No 09 (Vidyanarayapura).
Agency : Sri.R.S.Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/164/2020-21
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 04-01-22
Type of Mix : BC(Bitumenous Concrete)
Date of Test : 04-01-22

Type of Binder : 60/70
% of Binder Used : 5.0%
Weight of Aggregate : 200.0 gm
Weight of Binder : 10.0 gm
Temperature of water bath : 40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.5	1.5	98.3	Minimum Retained Coating 95%
2	98.5	1.5		
3	98.0	2.0		

* The results obtained are satisfactory as per standard requirements.

Note:-

The results pertain to the samples received and tested.

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Quality Manager



PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS CONCRETE

Lab ID : CP-RW-2021-06-30-58 Date: 07-01-22
Customer : Assistant Executive Engineer, Vidyanarayapura Sub Division, BBMP, Bangalore.
Address : Vidyanarayapura Sub Division, BBMP, Bangalore.
Project Name : Improvements to Roads and Drains at Munibyrappa Layout Chamundeshwari Temple and surrounding Area in Ward No 09 (Vidyanarayapura).
Agency : Sri.R.S.Thyagaraj, #15, Ramachandrapura, Jalahalli (P), Bangalore-560013
Customer Reference : BBMP/EE/BTP/WO/164/2020-21
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 04-01-22
Type of Mix : BC (Bituminous Concrete)
Date of Test : 04-01-22

Table 500-16 : Physical Requirements for Coarse Aggregate for Bituminous Concrete

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	12.4	Combined Flakiness & Elongation Index for BC is Maximum 35%	IS:2386 Part I
	Elongation Index	11.8		
Strength	Aggregate Impact Value	22.1	Maximum 24%	IS:2386 Part IV
Specific gravity	Specific gravity	2.68	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.21	Maximum 2%	IS:2386 Part III

* The results obtained are satisfactory as per standard requirements.

Note:-

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TEST REPORT ON STABILITY OF MIX

Lab ID	CP/17/01/06/01/22	Date: 04/01/22
Customer	Associated Construction Engineers, Hyderabad	
Address	Hyderabad, India	
Project Name	Improvements in Road and Bridges at Hyderabad	
Agency	Sri P. S. Engineering, Hyderabad	
Customer Reference	BSP/17/01/06/01/22	
Source of Sample	Hot Mix Plant, Hyderabad	
Sample Condition	Satisfactory	
Date of Receipt	04/01/22	
Type of Mix	M Bituminous Concrete	
Date of Test	04/01/22	

The results of the tests conducted on the Bituminous Concrete mix sample are as follows

Sr. No	Particulars of observations	TEST 1	TEST 2	Quantity Sample as per IS 1601-1959 specification table 200 15
1	Marshall Stability at 60°C, K.S	11.14	11.14	100 (Satisfactory)
2	Marshall Flow at 60°C, mm	5.52	5.51	2.5
3	Percent air Voids	4.22	4.24	5%
4	Percent Voids in mineral Aggregates (VMA %)	14.22	14.24	13-15
5	Percent Voids filled with Bitumen (VFB %)	71.21	71.43	65-75
6	Density, g/cc	2.25	2.26	

* The results obtained are satisfactory as per standard requirements

Note:-

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Authorized Signatory
(Quality Manager)



**TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BM
(IS 2386)(Part 1) 1963 (RA2011)**

Lab ID : CP-RW-2018 **Date:** 08.01.22

Customer : Assistant Executive Engineer, Vidyanarayana Sub Division, BBMP, Bangalore

Address : Vidyanarayana Sub Division, BBMP, Bangalore

Project Name : Improvements to Roads and Drains at Mundiyappa Layout Channudeshwari Temple and surrounding Area in Ward No 09 (Vidyanarayana)

Agency : Sri R S Thyagaraj, #15, Ramachandrapura, Jahahalli (P), Bangalore-560013

Customer Reference : BBMP/TF/BMP/WD/164/2020-21

Source of Sample : Sample supplied by Agency

Date of Receipt : 07.01.22

Type of Mix : BM (Bituminous Macadam)

Date of Test : 07.01.22

Sl. No.	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	470	465
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	6	7.00
4	Average percentage	%	6.50	

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Authorized Signatory
Quality Manager



Lab ID

: CP-RW-2018-

Date: 08-01-22

AFTER EXTRACTION(Trail)

Weight of Sample	:	470	Grams		
IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	38	38	8.1	91.9	90-100
13.2	147	185	39.4	60.6	56-88
4.75	191	376	80.0	20.0	16-36
2.36	28	404	86.0	14.0	4-19
0.3	32	436	92.8	7.2	2-10
0.075	31	467	99.4	0.6	0-8

AFTER EXTRACTION(Trail2)

Weight of Sample	:	465	Grams		
IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	38	38	8.2	91.8	90-100
13.2	147	185	39.8	60.2	56-88
4.75	191	376	80.9	19.1	16-36
2.36	28	404	86.9	13.1	4-19
0.3	28	432	92.9	7.1	2-10
0.075	30	462	99.4	0.6	0-8

* The results obtained are satisfactory as per standard requirements

Note:-

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DETERMINATION OF RATE OF SPREAD TACK COAT

Lab ID : C.P.RW-2021-06-30-58 Date: 16.01.22
Customer : Assistant Executive Engineer, Vidyanagar Sub Division, HHMP, Bangalore
Address : Vidyanagar Sub Division, HHMP, Bangalore
Project Name : Improvements to Roads and Drains at Mumbhargal Layout (Chamundeshwari Temple and surrounding Area in Ward No.09 (Vidyanagar))
Agency : So R S Thangajay, #15, Ramachandrapur, Jalahalli (P), Bangalore-560013
Customer Reference : HHMP/ELTHP/WD/64/2020/21
Sample Condition : Satisfactory
Date of Receipt : 08.01.22
Type of Mix : Tack coat
Date of Test : 08.01.22

Sl.No	Determination	Unit	TEST 1	TEST 2
1	Size of Plac (mm)	Mt	0.30 x .30	0.30 x .30
2	Area of Plac (a)	Sq.mtr	0.09	0.09
3	Initial Wt of empty Plac (b)	Kg	0.78	0.748
4	Final weight of plac after application of tack Coat (c)	Kg	0.803	0.771
5	Weight of tack Coat (d = c-b)	Kg	0.023	0.023
6	Rate of spread of tack coat	Kg/sq.m	0.256	0.256
7	Average	Kg/sq.m	0.256	
8	Specified Limit	Kg/sq.m	0.250 Kg/sq.m	

* The results obtained are satisfactory as per standard requirements.

Note:

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BC IS 2386 (Part I) 1963 (RA 2011)

Lab ID : C.P.R.W.-2021-06-30-48 Date: 10-01-22
Customer : Assistant Executive Engineer, Vidyaranyapura Sub-Division, BHMP, Bangalore
Address : Vidyaranyapura Sub-Division, BHMP, Bangalore
Project Name : Improvements to Roads and Drains at Munibyaappa Layout Channudeshwari Temple and surrounding Area in Ward No.09 (Vidyaranyapura)
Agency : Sri R.S. Thyagaraj, #15, Ramachandrapura, Jubahalli (P), Bangalore-560013
Customer Reference : BHMP/EE/HTP/WO/164/2020-21
Source of Sample : Sample supplied by Agency
Date of Receipt : 08-01-22
Type of Mix : BC (Bituminous Concrete)
Date of Test : 08-01-22

S/no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	477	476
3	Bitumen percentage	$\frac{A-B}{A} \times 100$ A	4.60	4.80
4	Average percentage	%	4.7	

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Lab ID

: CP-RW-2021-06-30-58

Date: 10-01-22

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm)

: 477

IS Sieve Size (mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified limits as per IS:2386 (grading-2)
19	0	0	0.0	100.0	100
13.2	4	4	0.8	99.2	90-100
9.5	62	66	13.8	86.2	70-88
4.75	112	178	37.3	62.7	53-71
2.36	88	266	55.8	44.2	42-58
1.18	29	295	61.8	38.2	34-48
0.6	11	306	64.2	35.8	26-38
0.3	46	352	73.8	26.2	18-28
0.15	45	397	83.2	16.8	12-20
0.075	55	452	94.8	5.2	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm)

: 476

IS Sieve Size (mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified limits as per IS:2386 (grading-2)
19	0	0	0.0	100.0	100
13.2	4	4	0.8	99.2	90-100
9.5	62	66	13.9	86.1	70-88
4.75	112	178	37.4	62.6	53-71
2.36	88	266	55.9	44.1	42-58
1.18	29	295	62.0	38.0	34-48
0.6	11	306	64.3	35.7	26-38
0.3	46	352	73.9	26.1	18-28
0.15	45	397	83.4	16.6	12-20
0.075	55	452	95.0	5.0	4-10

* The results obtained are satisfactory as per standard requirements.

Note:-

The results pertain to the samples received and tested

All information Furnished by Customer Representative

Any correction in the report will make this report invalid

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Samples will be disposed after 30 days from the date of issue of test certificate

AEE (MRP) SD

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End of Report



FOR CIVIL PRO.
R.KARTHIK NECHAN
Authorized Signatory
Quality Manager